

## **ABSTRACT**

Today, thermal management is becoming a more and more important issue in vehicle development. To minimize expenditure and to support rapid development, it is necessary to use efficient simulation tools. With the presented method, precise and detailed thermal analysis of the engine, gearbox, exhaust after treatment, as well as vehicle climate control under stationary and transient driving conditions are possible.

It is necessary to use different simulation tools with different modelling depth. With this approach it is possible to cover the entire vehicle thermal management in a scalable manner from 0D to 1D and 3D. However, with the application of different simulation tools the communication between the different software packages (simulation models) must be ensured. This communication is guaranteed by efficient interfaces, which are also described in this paper.